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1862 YALE MEDICAL DISSERTATIONS

Cowles

1862

The Mammary Gland.

E O ~~Colt~~ Cowles

The young student of Medicine labors under special embarrassment when called to treat of a subject at once so delicate and difficult. For how can he be expected to be familiar with an organ so carefully guarded from common view; one which if he would examine, lessens strictly forbidden that act might appear to him, he seems to hear the warning; "Prend, Prend ne Profani". It is true he may recall, though only after the lapse of near a quarter of a century, nature's fountains from which he took draughts long and deep, but his observations at that period of life must necessarily have been limited, and if dependent on this last resource alone, his case is most desperate. Upon those then who have been more favored we must rely to come out.

Unlike many of the organs which have a prominent part in the human economy, the female breast is not a rare entity. That it only has always excited the highest admiration, and

Dudley

(Author Unknown) Mar. 10, 1960

Aneurisms

An Aneurism may be defined to be. "A vascular tumor communicating with an artery, arising from some impingement of the arterial coats".

An Aneurism may be either spontaneous or traumatic

Of the former we have:

That which results from the simple dilatation of all the coats of an artery, which is termed a True aneurism.

That which results from the rupture of the internal and middle coats and dilatation of the external or fibrous coat - to which the name of False aneurism is given.

Secondary to either of these, rupture of the coats may take place with infiltration of the contents into the surrounding tissues forming what is called a Diffused Aneurism

A Traumatic Aneurism may arise when there is rupture of an artery by a wrench or strain, or when an artery has been lacerated by a broken bone or by a punctuating wound, the skin having healed,

but the wound in the artery remaining open. In these cases extravasation takes place into the surrounding cellular tissues, and an aneurism, diffused or circumscribed, is formed.

The predisposing cause of spontaneous Aneurism seems to be generally atheromatous degeneration of the arterial coats. This affects principally the middle coat, and the first effect is a loss of elasticity and tone. In this state they readily yield to the constant pulsation of the bloods impulse; dilatation of all the coats takes place, and a true aneurism results.

Or, if degeneration shall have proceeded further, on the application of a sufficiently exciting cause, the internal coats are ruptured and the external coat, unable to withstand the unusual strain, rapidly dilates and a false aneurism is formed.

Calcareous deposits in the arteries are also supposed to favor the occurrence of this disease, either by narrowing the channel and thus causing dilation on the proximal side or else, what is more probable, by irritation bringing about ulceration and so predisposing

the arterial coats to yield on the accurrence of any exciting cause.

The exciting cause of this affection may be any strong mental emotion increasing the force of the action of the heart and arteries. Or any unusual bodily exertion, especially in persons unused to any great muscular effort.

The period of life at which aneurisms are most common is from thirty to fifty years of age. They are more frequent in men than in women probably owing to the fact that they are so much more exposed to the exciting causes already mentioned.

The symptoms of aneurism when it occurs on the neck or extremities are generally well marked.

It is seen to be a soft, compressible tumor lying on the track of a large artery and pulsating with it. The patient frequently discovers it after some violent strain or exertion when something seemed to give way. In its early stages it is soft and pulsatory, but as it increases in size, becoming lined with successive layers of coagulated fibrin, and increased by adhesions from the surrounding parts, it

becomes firm and hard - and pulsations can then rarely be distinguished. By pressure on the trunk nerves it produces numbness and pain in the parts beyond. Edema also from pressure on the veins takes place and the limb becomes swollen, discolored, weak, and sensibly colder.

As the aneurism enlarges it tends to the surface or some cavity open to the air, the original coats become thinner but are strengthened by adhesions to parts around. As the tumor progresses absorption of all tissues, hard and soft, bone and cartilage precedes its course. and, as it approaches the surface, inflammation, ulceration and sloughing follow, the aneurism bursts and the patient dies.

Occasionally however immediate death does not follow - cases occur where a portion of coagula becomes impacted in the bleeding orifice and for a time the fatal issue is delayed - but this eventually becoming dislodged bleeding again and again recurs until the patient sinks.

It is manifestly of the highest importance that the disease should be correctly diagnosed at the earliest

possible period, for it is in the earlier stages that any treatment promises to be most successful

As before stated an Aneurism is seen to be a tumor situated on the track of a large artery and pulsating with it. Any other tumor of much size lying over a large artery will have its pulsations communicated to it. But if such a tumor be grasped and raised no pulsation is felt, while in an aneurism it is felt in all directions. Then again no pulsations are observed in such a tumor until it has obtained considerable size. An Aneurism pulsates from the beginning

Blood may be pressed out of an Aneurism by steady pressure, or by grasping, and it will fill again by jets

This may be simulated by a tumor in loose cellular tissue gliding under pressure - but if it be grasped, or pressure be made directly downward upon the artery, no such result will follow.

Moreover an aneurism may be rendered flaccid by pressure on its artery at its proximal side and increased in size by pressure on the artery beyond.

In addition to these there is a symptom which is generally considered more pathognomonic than any of those

already mentioned; and that is a peculiar vibratory thrill caused by the circulation through the tumor. This is more relied on as a diagnostic symptom - still even this may be produced by other causes; - by a certain degree of pressure on an artery. or by an anemic condition of the blood.

Now when all these symptoms occur, as they generally do in the early stages of this disease, there is no doubt that an Aneurism exists; but when we see the tumor for the first time, after the changes already spoken of have taken place, it is often extremely difficult to distinguish it from other tumors. Still, even then, we may often obtain from the patient such a history as will determine its nature.

The Treatment of Aneurism may be either medical or surgical. Little reliance however for a permanent cure can be placed on internal remedies. but in some cases where the position of the tumor renders an Operation impossible, palliative remedies, such as will retard the progress of the disease are the only treatment that can be adopted. This is the case when the Aneurism is situated deep within the cavity of thorax or abdomen

Such treatment consists in the most absolute quiet of mind and body as is consistent with the general health, and remedies calculated to depress the action of the heart and arteries. Care however should be taken, in fulfilling these indications, to avoid impoverishing the blood by too much depletion, or reducing the system so much as to increase the irritability of the heart and arteries and thus bring about the very condition of things we wish to guard against.

The only efficient treatment is to impede the passage of blood through the tumor and thus permit its contents to coagulate. The effect produced upon the aneurismal tumor by this means appears to be this. The sack becomes lined with concentric layers of fibrin. These go on accumulating until complete solidification takes place and the tumor becomes a hard and inelastic ball all traces of which are subsequently removed by absorption. Care should be taken however that the circulation be delayed only, not stagnated; for where this latter takes place a very different result follows. Here instead of the process of solidification slowly taking place the sack is at once filled with a soft coagulum

incapable of organization, which sooner or later is removed and no cure is effected.

There are two methods of Surgical Treatment now generally in use. Ligation and Compression of the artery with which the aneurism communicates.

It was a practice of some of the older surgeons to cut down and tie the neck of the sack, if practicable, or, failing in this, to ligate the artery just above and below this spot. but occasional success only followed this operation. for the artery being operated on at a diseased spot the subsequent process of adhesion rarely took place and, secondary to this, hemorrhage, the very evil the operation was intended to prevent almost certainly followed.

Ligation at the cardiac side at some distance from the tumor is now generally preferred as the most certain means of cure. In determining the place for this operation it should neither be too near the tumor lest a diseased part be included, nor so far off that too great a circulation be kept up by the collateral branches, nor in the immediate neighborhood of any large branches.

The effect on an artery of a ligature is the permanent occlusion of its channel, the internal and middle

coats are as clearly cut through as by a knife, contracting and slightly retracting on each side the cut edges are brought in contact, plastic lymph is effused and adhesion takes place. This result is assisted by a plug of coagulum which fills the artery to the nearest branch. If however the ligature be placed just below a branch artery there will be no room for the formation of this coagula and adhesion then rarely takes place.

Similar processes take place externally also. Lymph is effused around and on each side the ligature and a dense swelling of some size is formed in which the ligature is deeply imbedded. Subsequently, in the course of ~~from~~ from five to twenty days according to the size of the artery, the ligature sloughs off and may be removed.

A new process is now set up – this exudation is absorbed and, in most cases, that part of the artery which it covered dwindles down to an impervious cord.

After the operation the limb becomes sensibly colder. On this account the limb should be warmly wrapped. No artificial heat should be applied as inflammation will probably follow if this is done. In the course of from twenty-four to forty-eight hours warmth returns. The tumour

becomes hard, often painful, and pulsation are no longer felt in it nor in the artery beyond. Soon however the anastomosing vessels are seen to increase in size, pulsation returns in the artery beyond, and the limb very speedily resumes its natural condition.

There is another treatment by ligature. Tying the artery near the tumour at its distal side. This has been practised when owing to the nearness of the tumour to the heart the operation could not be performed on the cardiac side. In this case a point is selected for the operation such that the plug of coagulum which extends up to the nearest collateral branch shall fill the tumour. Now to accomplish this the ligature must be between it and the next branch beyond. But this will often bring it so near the aneurism that there is the same objection as was found in performing the operation at the neck of the sack:- that a portion of the diseased artery will be included and the operation fail. Success has attended this operation in a number of cases but it is manifestly inferior to ligation on the cardiac side.

Treatment by compression of the artery at the car-

diac side has of late attracted considerable attention. Preparatory to performing this operation the limb should be firmly bandaged from its extremity to the place where pressure is to be made. A difficulty was at first experienced in performing this. It was supposed that the pressure must be continuous and the circulation entirely stopped. This the patient could rarely bear, the parts about the artery pressed upon would become extremely painful and if the pressure was continued inflammation was sure to follow. this rendered it rarely possible to continue the pressure long enough to effect a cure. It is now known that that this is unnecessary. If the pressure is made intermittingly, a few hours at a time, with intervals of rest, the same object can be accomplished and with comparatively slight inconvenience to the patient. Neither is it necessary that the pressure should be made at the same spot all the time. different points on the track of the artery may be successively chosen for this purpose.

This mode of treatment certainly commends itself as being more safe and painless than by ligature. It involves no danger of secondary hemorrhage, and in case of

failure does no harm, generally, beyond a slight delay as a ligature can generally be as well applied then as at first. And on this account it has been recommended by some surgeons that this method be always first tried when the tumor is favorably situated and the danger not imminent before using a ligature.

Occasionly a spontaneous cure has taken place. a portion of the lining coagula becoming detached has lodged in the mouth of the sack partially or entirely impeding the circulation through it.

So also the same thing has happened when the artery itself is closed by the pressure of the aneurismal tumour

But we can never rely on a spontaneous cure occurring and if we find the tumour making progress an operation should always be attempted if possible.

Imitating the first of these modes of spontaneous cure the attempt has been made, when other treatment seemed to be inapplicable, by manipulating the tumour, to detach some of the lining coagula from its coats, hoping that it could be carried into the artery and a cure result. Also to produce coagulation in small aneurisms by the injection of styptics or by the applic

cation of a Galvanic current, but of these methods enough cases have not been reported to judge of their advisability.

Phthisis.

Phthisis or its English synonym Consumption, may be a morbid condition of any part of the Human body, by which, a degenaration and wasting away of the part is effected — but in Medical parlance it is understood more particularly to refer to the Lungs as the seat of the disease, therefore I shall restrict this description of the disease to these organs.

Nature and Causes of Phthisis

Many have been the theories advanced, and speculations indulged, to account for this scourge of the Human race and an ever active effort, to obtain a specific for its cure, but the Thousands who fall victims to this fell destroyer every year, but too plainly prove how futile has been the attempt to demonstrate the one only cause, and to procure the one sure and never failing remedy — One Author maintains that in order to the performance of the function of the whole nervous system,

some element of combustion must exist in the Brain and spinal chord, the combustion of which generates a peculiar fluid by which impressions are transmitted to and from the encephalon. - This substance he conceives to be Phosphorus, - hence he compares the Brain to a Galvanic battery — It is well known that Phosphorus exists as an element in the Brain and spinal chord, and all nervous substance throughout the entire body and for what use it serves in the animal economy, other than for the production of nerve force it is difficult to conjecture Therefore, as Phosphorus is found in less than the normal quantity in the nervous substance of those who have died of consumption Dr Churchill's conclusion is, that consumption is caused by the elimination of Phosphorus from the system, and not receiving a sufficient supply through the medium of food, hence a gradual depressing influence upon the powers of life, and a consequent degeneration

the size of millet-seed of a whitish, opaque, or translucent appearance, often thickly studding a small space, or the entire surface of one or both lungs — Other forms of tubercle have been described, & yellow gellatinous variety, and gray tubercle, all of which, in all probability, when first deposited with in the substance of the lungs identical, but presenting different appearances at different stages of ulceration and degeneration of the tuberculous substance, ——

Symptoms, Course, &c ——

Two stages may be observed in the course of Phthisis corresponding to the deposition and degeneration of tubercle; — the patient may experience a short, dry, hacking cough which becomes more severe by exercise; or cough may be absent, and emaciation and languor mark its insidious attack; for which he can find no ascribable cause, but contents himself with the fatal delusion of taking cold; — Though these symptoms

usually mark the incubative stage; but not always so; An attack of Hæmptysis may be the first symptom to usher in the disease, and apprise the patient of his danger — Pains in the back and shoulders, often running down the arm, pain in the side and tenderness on pressure near the axillary intercostal spaces near the sternal extremity, the latter Mr. Beau believes to be usefull in Diagnosis in doubtfull cases — The Hæmorhage usually subsides spontaneously or readily yields to remedies, Upon the appearance and subsidence of Hæmorhage the severity of the symptoms abates, Cough and Dyspnoea become less, and the patient flatters himself that he is getting better, when but too soon he is made aware of the falsity of his hopes and the device, by which he was lulled into a feeling of security and repose, to collect force, so to speak, to break forth in ten fold greater severity than before The hemorhage often returns again and again the cough and expectoration increases, usually

a fresh deposition of tuberculous matter.
The first indication is met by a proper regulation of diet, exercise, and pure air, and every means calculated to give tone and vigour to the system.—
One of the most usefull of the hygenic exercises is riding on horseback daily which gives tone to all the internal organs as well as to the muscular and nervous systems.— Inflation of the lungs to their utmost capacity with cool pure air especialy in the morning, to remove all mucus or morbid matter which may have been deposited in the air cells.— All causes operating to debilitate the system, and destroy the vitality of the blood, must be scrupulously sought for and removed at once, such as errors in diet, and drinks, residence in damp localities, uncleanliness &c., or pernicious habits indulged, as masturbation which is doubtless is a very frequent cause of this disease, excess in venery, or whatever

else is sapping the fountain of life;—
The above rules rigidly enforced, combined
with alteratives and tonics, will usually be
found beneficial in the early stages of the
disease, and a cure with a good degree of hope
may be entertained;— Of the Tonics the Calyp-
itates, bark, Quinine, Gentian, &c are found
to be the most usefull,— Of the alteratives
Iod. potass. the Mercurials, of which the
prot. Iod. is one of the mos valuable, the prep-
arations of Manganese, the Syrup of
Iod. Ferri, which combines an alterative, and
tonic,— the Hypophosphites of soda, potass.
Iron and Manganese, of these any one or
combination may be selected for the par-
ticular case — Dr, Churchill believing
Consumption is caused by deficiency of
phosphorus, believes the Hypophosphites
to be the only true and sure remedy in all cases
but it is as useless to seek for a specific
in this disease, as it would for the "Elixir
of Life" — As the disease advances, complications

arise, and local and peculiar symptoms require local and peculiar treatment; e.g. cough, Hæmorrhage, pains in the side and chest, Dyspnœa, Night-sweats, enlargement of the Liver, Pleurisy;— For the cough, Squill Wine of Antimony, Sanguinaria, Balsam Tolu, Salts of Morphia, Hydrocyanic acid, Wild cherry bark in tinc. or decoction, these variously combined according to the peculiar indications are the remedies found the most usefull — Hemorrhage if not too profuse, is rather salutary than otherwise to relieve congestion, but if remedies are called for to arrest it, the aromatic Sulphuric acid and the vegetable astringents Tanic, and Gallic acid, — Leeching or Cupping, and counterirritation, Tartar emetic we are to rely on chiefly — For pain, the Opiates administered by the mouth, or by subcutaneous injection — counterirritation with Croton Oil or Tartar emetic, Mustard or Blisters are to be resorted to as the case demands

For Dyspnoea - Ipecacuanha, Lobelia, in time. Antimonials and Opiates should be selected to relax spasm, promote secretion and relieve irritation; - Night-sweats should be treated with tonics and acidulous drinks and in all cases a nutritious diet should be allowed, especially animal food

That a proper amount of Carbon shall receive into the system for the production of the requisite amount of heat, fat-meats, or oily food should be selected - for this purpose Cod liver oil has been found very beneficial, with perhaps a slight alterative effect, from the trace of Iodine which it contains; the oil should be used perseveringly for from four to six months in tablespoonfull doses three times a day - As far as is yet known, these are the remedies found by experience best calculated to effect a cure, but when the resources of Nature science and art have been exausted

without avail, it becomes our painfull duty to lighten the burdens of pain, and smooth the pathway to the grave by those means best calculat to accomplist that object;—

Nath.l W. French,

Yale Medical Institution, 1862

in the system of nutrition, therefore the deposit into the lungs of that characteristic of the disease Tubercle. — Other theories have been advanced, referring to the blood as the primary seat of the disease — To the habits and modes of life — To miasmatic influence, To hereditary predisposition &c, any one or all of which, are, doubtless, causes in different cases Dr Chas Hooker of this Institution after long experience and untiring investigation is of the opinion that the too free indulgence in the use of drinks, and especially Cold water which he has found to be very common, tracing it to the child at the breast, even to the Mother before the child is born — is one great and prominent cause of this fearfull malady The reasons are obvious, — By a too free use of drinks the proper solvents of the food are diluted — The functions of digestion secretion and elaboration are imperfectly performed, causing degenaration of the blood thereby disordering nutrition producing that

condition of the system which ends at last in Consumption. — Other prominent causes may be mentioned e.g. Masterbation excess in venery, exposure to cold and heat; and especially sudden changes from one to the other —

such have seemed to be the most prominent causes of this disease — And after studying carefully all the investigations that have been instituted to account for this fearfull malady, I can only come to the general conclusion, that whatever is operating to depress the powers of life — to weaken the vital force or in any way to interfere with Oxarification Chylification, Elaboration and secretion therefore disordering Nutrition, may be and is the cause, of Consumption ——

Anatomical Characters. ——

The most characteristic appearance of the lungs in this disease is the infiltration of Tuberculous matter into their substance thus obliterating the air cells, consequently interfering with Respiration and the aeration of the blood — The quantity and condition of Tubercle as it is seen in its different stages is various; from the size of Millet-seed (Milliary Tubercle) to the consolidation of the entire lung; — Milliary tubercle are about-

regular, but often with remissions of longer or shorter duration, get of much comfort to the patient; — At length the expectoration assume a more purulent character, the thoracic pains, often, increase; — the febrile symptoms are more decided; the pulse becomes more frequent; — the Tongue somewhat furred, the appetite impaired, and frequently perspires during sleep; — At this point in its course the first stage reaches its height, and remains thus a variable length of time, and may enter the second stage abruptly, or by imperceptible degrees; — In the second stage there's an increase of fever preceding the opening of a vomica consequent — probably upon inflamation excited by the matter arresting from the breaking down of tubercle; — The patient now experiences pain in the chest, heat thirst, — loss of appetite, furred tongue &c untill at length the character of the expectoration denotes that an outlet has been made — The peculiar character of the expectoration

is the most characteristic symptom, which is now purulent, and in well defined masses often accompanied by lumps of softened tubercle in the shape of cheesy or curdy matter of a yellowish or greenish color. The cough is now increased, especially in the morning when the accumulations of the night are to be thrown off;— The fever assumes the hectic character, with exacerbations and remissions sometime in the twenty four hours; the fever often subsiding with a gentle perspiration;— Chills and night sweats not unfrequently occur independently of the fever; the sweats often very profuse and exausting; thus by a steady march, the disease advances to its final termination. As the lungs become more and more involved in the disease, Respiration is by degrees interfered with, consequently the function of the lungs; of aerating the blood cannot be duly performed, hence, venous blood passes on unchanged, and being poisonous

as a nutrient-fluid and supporter of life, by its effects upon the Brain, Cornea, or from the disease in the lungs themselves, Asphyxia supervenes, and death closes the scene;——————

Diagnosis;——

It is only in the first-stages that there is much difficulty in recognizing Phthisis. Of general emaciation, with short, dry, hacking cough, with bloody or dark coloured sputa, pains between the shoulders, frequency of pulse, shortness of breath, exist, which persist for months, Tuberculous Consumption may be strongly suspected but if in this condition Hæmoptysis occurs we may pronounce with certainty;—The disease with which we are most liable to be confounded in our diagnosis is chronic Bronchitis in which many of the above symptoms are prominent.— But by Auscultation and Percussion we have a more direct, and positive method of discrimination between this and

and other thoracic diseases, and arriving at a correct conclusion — The deposition of tubercle is usually first formed in the upper lobes oftener in the left, than the right, which is revealed by percussion, above and just beneath the Clavicle; giving a dull sound owing to the solidification of that portion of the lung by infiltration of tuberculous matter — Auscultation evinces more clearly bronchial respiration from the increased power of conducting sound given to it by solidification; — Bronchitis is known by the auscultatory sounds common to both being diffused more equably over the entire chest, and absence of the dull percussion sound The greatest difficulty being found in deciding between the latter disease and acute phthisis in which milliary tubercle are disseminated through the entire lung; but if expectoration of dark coloured sputa persist, resisting to remedies, there can be but little doubt of a case of Milliary tubercle

By Auscultation and percussion we make ourselves acquainted with the state of the lungs whatever be the stage of the disease when it comes under our notice - As the deposition of tubercle advances, the sound elicited by percussion, becomes more dull and flat, as the lungs become more and more solid - By Auscultation, to make the case more positive, we ascertain the same fact, by the healthy, normal respiratory murmur becoming more and more diminished as the deposition advances, untill it ceases altogether, and bronchial sound only remains, If the case has advanced to the breaking down of the infiltrated mass, this is expectorated and a cavity termed a vomica is left, which is known by a hollow sound by percussion, & gurgling rale if the cavity contain a liquid, or pectoriloquy and cavernous respiration if empty, by Auscultation

The most liability to mistake by the physical signs, is in pulmonary Emphysema and

Pneumothorax; but by a carefull observation there is usually little difficulty in determining the character of the case; ——

Prognosis.— In the greater number of cases in the advanced stages it is admitted to be unfavourable; yet cures not unfrequently do take place, even after large cavities have formed in the lungs as has been proved by dissection after death by some other cause; ——
If taken early in the disease, some hope may be entertained, of a recovery, especially if the cause be such as can be reached and removed; these by suitable treatment, absorption is promoted, cicatrization of the cavity takes place, and a gradual return to health is the result; ——

Treatment;— The general indications are to correct the predisposition, to remove all exciting causes, to promote the breaking down, and absorption or expectoration of existing tubercle, and to prevent-

We live in an age of activity, energy and increasing activity, and we can no more keep up with the rapid strides being made in every department of human knowledge than a fly on the wheel; is pushed forward with the power of steam, and with the velocity of lightning. The sciences, Medicine, in fact behind any other department of human knowledge, and before the lapse of the rotation of a day, the sun never sets, for as soon as one set of hemispheres is enjoying the blessings of rest, others rise to bring on the work, and by the lustrous conflagration of gas is being made to confer one that which is [illegible] and resources already in hand [illegible]

[illegible] are [illegible] finding the [illegible] of
scientific truth. We leave a day
to be outstripped almost beyond the
possibility of recovery; and in our
days [illegible] [illegible] [illegible] [illegible] [illegible]
old fogies, every thing has to be examined
with care, and men are unwilling
to receive any thing as truth be-
-cause some great man has heretofore
pronounced it. The most rigid
criticism is brought to bear on
every accomplishment, no matter
whence it originated or whose name
stands so high in any department
as to screen either the [illegible]
or the conclusions from the most
searching examination. The ancients
took the declarations of their oracles
without questioning their truth; but
now we must try the declarations of
any oracle by a three-fold test,
before we can call them [illegible] the [illegible]

established truth. This is perhaps all it should be, and to "prove all things" [illegible] is as good a margin more critical when time uttered.

It may be observed that [illegible] other parts of [illegible] have been lost, and that the [illegible] have all been [illegible] by those who have proceeded [illegible] [illegible] as well as [illegible] that the mighty depths of the ocean have been ploughed [illegible] become familiar with all that is therein, which can only be mined as fill has dealt with [illegible] reverence for him, who has written upon the surface of the mighty deep that the hand that performed it will well conclude that it [illegible] [illegible] redeemed, and that [illegible] preservation of those things which they contain.

has been abstracted by men from the Creation of innovations which they are capable of [illegible] [illegible] yet it has been [illegible] — [illegible] and [illegible] [illegible] with the subject conclusion that the vegetable and mineral kingdoms have all been exhausted, and there remains nothing more by which means stock of humanity can be increased. It is only necessary for us to take a [illegible] [illegible] field that lies before us in order to be convinced that there is work enough, yet unfinished to occupy the time of many succeeding generations if, indeed, it can ever be accomplished. This supposition can only be met by the ambitious, the industrious and persevering.

Let us briefly notice some of the subjects which merit our attention, both on account of their importance as well as the unfinished state in which we found them.

Physiology the most [illegible] of sciences, has been called into a fixed permanent [illegible] and has established on [illegible] tables not surpassed in any other field.

The zeal which has attended the investigations of Physiologists is certainly most gratifying to the friends of this department of natural science. But after all that has been discovered, how much yet remains undeveloped and still [illegible] further investigation!

The Pneumatic demonstrates the [illegible] doubly muscle organ which gives the heart its function to the [illegible]

causing it to course its way among the innumerable canals that are provided to lead it within its appointed limits, that can be just sufficient to maintain the vigorous circulation, from the blood supply that is its ultimate destination, and not at all to the cephalic cavity to the pressure and back again to the heart. I ask Can it be anatomically physiologically given as a theory of action of this hydraulic apparatus free from all misting, and one that will be free from all objections as the pressure from behind the mass receives its head from behind it is the depends is still a matter of question, and attributes a second type of pressure so one can form a theory of animal heat, which will be universally received, [illegible]

[illegible] reference to the ductless glands, the spleen, the thymus, the pituitary and suprarenal bodies, but this must be dogmatically asserted, for our knowledge of these structures is imperfect, and therefore such research would promise no reward to the investigator. Perhaps the most fertile subject may yet comprise some bold adventurer, as nothing [illegible] the discovery of the circulation of the blood [illegible] introduction of auscultation or stethoscopy of the heart.

Chemistry that most lucrative, valuable and almost [illegible] science in life, is still [illegible] of great importance, and that age in nothing may more [illegible] be expected, [illegible] the [illegible] greatly to be regretted that [illegible]

[illegible]
little attention [illegible] the
attendance upon lectures, and
[illegible] of them [illegible]
from the most plausible
this subject, however, sad must
also need have much more
is done, it is not possible for
me to determine the [illegible] of the
matter [illegible]
interest and expectation that
[illegible] of Society [illegible] the [illegible]
of our profession, will call [illegible]
[illegible] to study well the [illegible]
[illegible] much
In Connection with Chemistry
I would need refer to [illegible]
so heavy [illegible] Strong Chemistry
[illegible] attention. The [illegible]
have been greatly [illegible] of
the [illegible] afforded [illegible]
[illegible] [illegible] [illegible]

been more improved through the
means thus through many other
[illegible] much on the [illegible]
by being well versed in Chemical
Science, the increase in the kind
of remedial agents is not to be
to be believed, as is the concentration
of their virtues, and [illegible]
and a knowledge of their [illegible]
power in combating diseases.
We have already too good a list
of medicines, many of which have
little or no power, and some
other perhaps greatly overrated.
Much remains to be done before
we can hope to have a Materia Medica
ica, which will be a faithful
that which is [illegible]
men are apt to think that that
is a very drug and [illegible]
helpful, and that it [illegible]

for a display of talent, and
no rewards to him who cultivate
it. Also I think for a great
mistake, would it not [illegible]
the name of a man to posterity
as one of the greatest of [illegible]
who should discover a [illegible]
means of curing [illegible]
of eradicating the scroful[illegible]
diathesis? of certainly curing
fever in twenty four hours
[illegible] medical methods [illegible]
discover these specifics they [illegible]
[illegible] found and kept secret
should [illegible] they [illegible]
which have been discovered [illegible]
before the time of [illegible]
of the possibility of finding a [illegible]
of the most loathsome of all [illegible]
[illegible] Pox — until very recently
had it been [illegible] mans head
[illegible] would [illegible] to

[illegible] mistake [illegible] [illegible]
the means [illegible] [illegible] from [illegible]
pain [illegible] comfortable [illegible]
And here perhaps [illegible] [illegible]
two [illegible] of all that has been
achieved by the mighty [illegible] of [illegible]
and will we not be [illegible] and to
make an effort to furnish [illegible] [illegible]
one additional [illegible] for
already [illegible] [illegible] [illegible]
benefits, by which the world is
incalculably blessed, through the
labors of the most [illegible] [illegible]
and noble fraternity that [illegible]
operated for the good of [illegible]
One almost [illegible] [illegible] [illegible]
of [illegible] medicine which [illegible]
the application of [illegible]
of all the other departments [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] to [illegible] [illegible] [illegible] [illegible]
[illegible] our expectations [illegible] of our [illegible]

[illegible] wishes have remained [illegible] to
need connected with the Medical
Physiology and Chemistry the
fundamental laws of [illegible]
[illegible] do we look for [illegible]
been found definitely in the
practice when we bring [illegible]
fact to bear upon them. [illegible]
[illegible], but it is not discouraging
for in spite of all insurmountable
obstacles progress of the most [illegible]
character is found to attend the
researches of those who labour faith-
fully in the investigating [illegible]
mode of interrogating nature [illegible]
to reach a [illegible] dependent
so superior to that of [illegible]
years ago that we can truthfully
feel encouraged. It has been [illegible]
and immense advantages have
been secured, and though [illegible]
simple medicinal [illegible] has

our gently led, and the [illegible]
of our trance greatly increased.
But even in this there remains
much, very much, yet to be done
before we will be able to define
every disease, so as to remove
all doubt in reference to the
correctness of our judgement in
practice in any case without
proper knowledge of the functional
and structural disturbances
which form the very [illegible]
be founded on supposition and
thus is always hazardous even
in the hands of the scientific
how much more so, when visited
to by the ignorant and
pretender. It may [illegible] suppose
that by our experience we [illegible]
a disease [illegible] rightly to [illegible]
on practice, [illegible] we [illegible]
[illegible] an absurdity, we may

remember that medical experience
not being or treating a great number
of cases without physiological
some analogical reasoning
experience is a relief and
guide it may be always tested
disease, without - we desire
may probable sufficiency of
of science is to be learned in the
not to be found in
the midnight lamp which
matter volumes in
the collected wisdom of
may include our
and fascinating
to encounter the horrors of
from the purpose of
procedure with the
we are to
some a normal condition
Conclusion they
have very

with the seeds of death — or [illegible]
the [illegible]
should we follow in its [illegible]
[illegible]
the [illegible] of [illegible]
[illegible] of supposing [illegible]
[illegible] of the [illegible]
toil and unselfish devotion, is of
no account — availeth not — is a [illegible]
[illegible] of [illegible] —
which we should seek is founded
on the correct observation of [illegible]
[illegible] generalization of the facts
[illegible] of all the [illegible]
the observations [illegible]
the general conclusions [illegible]
in our favor [illegible]
[illegible] better and happier [illegible]
we may not [illegible]
[illegible] we may not [illegible]
[illegible] introduce to us an age [illegible] would [illegible]
[illegible]

[illegible] with [illegible] [illegible] with unerring certainty, neutralize it [illegible] [illegible] and with [illegible] [illegible], labor on and labor [illegible] and [illegible] our [illegible] into [illegible] [illegible] [illegible] [illegible] of the treasures of life [illegible] and death, and should we fail to accomplish the highest [illegible] of our ambition, do act, as it behoves us in the [illegible] struggle of [illegible] nature, with the consoling reflection that we had to the best of our ability and [illegible] [illegible] [illegible] our duty.

Catarrhal Ophthalmia

Catarrhal Ophthalmia or ophthalmia is comparatively mild inflammation of the eye, affecting principally, even in the large, and more commonly in children, especially those of strumous constitution, or [illegible] exposed to this cachexia.

It finds [illegible] of the conjunctiva, attended by an increase of the natural mucous secretions, identical with, and dependent on, the same causes as catarrhal inflammation of the Schneiderian membrane, or coryza.

The affection commences with a [illegible] of the lids and eyes, with an increased flow of tears, and is not uncommonly combined with the ordinary symptoms of coryza, which the patient denominates as a cold in the head and eyes.

These signs augment, and the limit becomes a bright-scarlet colour, from the spread of vascularity towards the cornea. In all respects the nature and appearance of the redness, and the character and arrangement of the blood vessels, are similar to what is [illegible] occurs in simple conjunctivitis.

As these changes proceed the membrane becomes [illegible] it is sometimes so abundant as to grow over the cornea, and, by collecting in front of the cornea, dims the patient's vision. As soon as a decided mucous flux is established, the appearance of the inflamed membrane alters; it becomes more [illegible] and covers to the minds of the observer an impression that it [illegible] the [illegible] received for the disease. In fact, the conjunctiva becomes a soft, relaxed and [illegible] appearance, [illegible] the nature of the disease. The tints are usually more mottled in this than in the simple form of conjunctivitis, and the [illegible] is more considerable, though a structure of minor importance

The subjective symptoms are at first exactly simi-
lar to those of the simple disease, viz., stiffness and
smarting of the lids, with [illegible] of the
eye, followed by roughness, as of sand between
the lids eye and lids, and a burning sensation—
These symptoms diminish as the secretion
begins to become copious, and the patient
scarcely if at all, complains of any pain from,
or intolerance of, light; hence, also, there is no
spasm in the orbicular muscle, nor much flow
of the lacramal secretion—

As the affection proceeds the redness assumes a
more uniform character, and the mucous [illegible]
augments till about the third or fourth day, whi-
ch, under favorable circumstances, the inflamation
diminishes, and the mucus assumes a yellower app-
earence, and a thicker consistence— At this
stage it collects about the eye lashes, and is
apt to glue the patients lids together during
sleep. Finally, in [illegible], and
in the pure form of the disease, it soon speed-
ily subsides, without leaving any trace of its previous
existence

[illegible]

and degenerates into a chronic form of muco-purulent ophthalmia, or, in strumous subjects, assumes the shape of tinea or some other affection of the eyelids.

In these constitutions also, the affection is sometimes attended by one or more pustules around [illegible] and [illegible] inflammation [illegible],

The constitutional symptoms [illegible] to those which occur in that slight febrile disturbance of the [illegible] ordinarily termed "cold;" there is [illegible] tendency to chilliness.

When other mucous membranes are simultaneously affected these symptoms are more severe, and accompanied by heaviness and dull pain in the head, and generally some interruption in the [illegible] of smelling and hearing.

Both the local and general affections suffer an increase towards night and a remission in the [illegible];

[illegible]

This disease not unfrequently passes through all the epithelial, or dermoid, tissues, the various membranes, and is attended with inflammation of the mucous surfaces, and other tissues, which are subject to particular names, and assume, in a distinct manner.— Whether or not the discharge of catarrhal conjunctivitis, strictly so called, be contagious, has more than the discharge from the Schneiderian membrane, is open to dispute.— It is the opinion of [illegible] that it has been [illegible] to be [illegible] the secretion of mucous, not pus, it is not capable of communicating a similar disease.— But as the disease is certainly propagated by intercourse, it has been held as of a contagious nature was certain.—

Excreted individuals should be separated from the healthy, and carefully abstain from using the same towels, bowls, &c.—

Catarrhal conjunctivitis usually attacks both eyes, or first the simple disease is frequently confined to one.— The uncomplicated form is a specific inflammation, invariably depending on atmospheric causes; it is a sporadic affection, has a definite course, and

is free from danger. — The vital activity and tension of the respiratory membrane, are relative to the discharge, a fact which explains and gives a peculiarity to the process, and to all similar processes in mucous membranes, [illegible] some cases even asthma, will terminate before more [illegible] is allowed to a respiratory action.

The predisposing causes are susceptibility and disease of constitution, especially a tendency to asthma, long confinement to cold or a warm room, and the [illegible] of the disease.

The exciting causes are peculiar states of the atmosphere; sudden changes from cold to warm or warm to cold, as occasioned by the salutary sudden [illegible] of cold; [illegible] feel; [illegible] a [illegible] current of air; [illegible] sentiments, or [illegible] when the season of the year and the atmospheric condition, [illegible].

These causes are [illegible] climates where the differences between the day and night are great.

[illegible] disease, the secretion of some little mucous, the absence of pain, and its general catarrhal features, can leave no doubt of the disease.

[illegible] life; is attended by a dull aching pain in the globe; severe pain over the brow, increased by coughing at night; and by a zone of small straight vessels running the cornea [illegible] by the conjunctival vascularity.

The cornea is always unassailable.

In healthy subjects, aided by abstinence, the disease will pass off spontaneously in a few days, and the severest cases invariably do most under judicious treatment.

Treatment.

The milder forms of catarrhal conjunctivitis require nothing further than care for a few days and [illegible] warm water to the eye.

In the [illegible] Dent's lotion, either general or co-

[illegible] al, is unnecessary, and is therefore unwise. A laxative action, however, is highly beneficial, and should consist of a mercurial and antimonial, followed by jalap, castor oil, or senna &c.

This is all the constitutional treatment necessary in ordinary cases, but if the conjunctivitis be combined with common catarrh or coryza, or the epidemic influenza, antimonials with ipecacuanha and Nitrate Potass, prove valuable remedies.

Higher stimulus local remedies are not adapted to the simple condition of catarrhal conjunctivitis; as the secretion is only mucous; but the pathological condition of the membrane not only bears, but is benefitted by astringents.

The best of these are the acetate of lead and alum, dissolved in distilled water, containing from three to five grains to the fluid ounce, and used slightly warm.

The lids should be frequently washed, and three or four times a day some of the astrin- [illegible] lids, by means of a glass syringe. In un-

practitioner suspects, if the local inflammation seems to cause its specific character and settle down into a chronic, more innocent disease, the 'Nil Desperandum' should be painted over the integuments of the side and a bitter opinion behind the ears.

In the advanced stage of the affection when the sides and face in the morning, it is desirable to smear a little zinc bi, lard, or zinc ointment along the lateral margins at night.

Many sufferers of intense [illegible] are more care on their use, are apt to stain the skin or the patient's garments, and in the common form of the disease, are not so efficacious as pure astringents.

The diet should be sparing during the early stages, and the patient should dress warmly, avoid damp and cold situations, and by no means stand in wet places or in currents of air.

It is not, however, necessary to confine patients to house unless the weather is very unfavourable, but on the contrary, a

[illegible]

[illegible]

Vaires [illegible]

[illegible] juin 1869

Purpura Hemorrhagica is a disease of the circulatory system, though classed by some writers, Neligan among the number, with diseases of the skin. We are told that its pathology is obscure and that the principles which should govern its treatment are, by no means, well established.

It is not a cutaneous disorder, much less an exanthem. There is no eruption in the proper sense of the word; the discoloration is by ecchymosis; the spots are not confined to the skin, nor to the sub-cutaneous tissue, but are found upon all the mucous surfaces; upon the pleura, the pericardium, the peritoneal investment of the intestines, the membranes of the encephalon, the sheaths of the great nerves, and even within the substance of the muscles. The discoloration is not the disease but merely its consequence, and affords a valuable diagnostic symptom

Symptoms, Great lassitude, faintness, and

pains in the limbs, frequently precede the attack, rendering the patient incapable of any exertion, but not unfrequently its access is sudden. In either case there is general prostration with great depression of spirits and the pulse is frequent and feeble. Sometimes, it is said, this state is attended with slight febrile symptoms recurring like paroxysms of hectic. There may be persistent vomiting attended with diarrhœa; or the bowels may be constipated; or they may be in a normal condition, and the vomiting may be entirely absent.

Goldie, (Cyc. Prac. Med. Vol. 3rd. Pp 765,) says that cases are on record, in which the febrile symptoms, and those indicative of internal affections of a congestive and inflammatory kind were very prominent, but I am inclined to believe with Rayer, that they were an accidental complication, and that in such cases only the disease pre-

sents the characteristics of an active hemorrhage. Neligan states that there is a febrile form which is epidemic.
In a period of time from the commencement of the attack, varying from twenty four to forty eight hours diffused livid spots appear upon the thighs, the abdomen, and sometimes upon other parts of the body. These do not disappear on pressure. Like a recent bruise they change from purple to blue, and from blue to a greenish yellow before they disappear. The lining membrane of the lips, the cheeks, and sometimes of the tonsils is covered with dark colored spots; the gums are spongy and disposed to bleed and not unfrequently show upon their surfaces black bleeding fungi which extend to the roof of the mouth. With this there may be hemorrhage from any of the great viscera of the body. The local hemorrhages when checked are liable to recur prolonging the disease, and are attended

with successive crops of the patches. Finally the patient is reduced to the last degree of debility, dropsical effusions take place in the lower extremeties, and a bloody diarrhœa that can not be controlled not unfrequently sets in.

It would seem from the above that the diagnosis could hardly be difficult, yet the disease is often mistaken for the ~~symp~~ toms are in many cases obscure.

The stigmata may be few in number and so escape the eye of the practitioner, or not suspecting the nature of the disease he may not examine the surface of the body. They are seldom however entirely absent, yet hemorrhages from the different viscera may precede them. Then there may be no bleeding from either the lungs, nose, stomach, or bowels, although the gums will usually, not always, be found spongy and disposed to bleed. There is one diagnostic symptom, mentioned by Professor Charles Hooker

of this Institution which is always present, and that is a peculiar expression of the countenance, which he calls "sorrowful". Once seen it can never be forgotten.

It is of the utmost importance to recognise this disease early in children who are passing through the perils of the first dentition, for fatal hemorrhage has been occasioned by lancing the gums during its progress

<u>Causes</u>, In some instances the hemorrhagic disposition is undoubtedly transmitted, but it can safely be said that the majority of cases are the result of defective nutrition. Indeed most writers agree that it is the result of debilitating causes. Willan gives a case where it resulted from excessive drinking of undiluted spirits, Bateman where it came on during a severe salivation, and Adair where it attacked a religious monomaniac who persisted in living upon bread and water alone. But other observers question the operation of the alledged causes, "for", say they, "it sometimes occurs among the opulent classes,

in persons who are not subject to debilitating influences, and this circumstance tends greatly to obscure the pathology of the disease." That it does occur among the opulent classes admits of no doubt, but that it attacks those who are uninfluenced by debilitating causes may reasonably be questioned

In all cases of purpura there is an alteration in the composition and vital qualities of the blood. It is impoverished, often thin and watery, and a drop placed upon a piece of cloth presents a red, or pinkish, central stain, surrounded by a margin of colorless liquid.

I have myself seen but few cases of Purpura. One was a married lady of some twenty eight years of age. She had been a most intemperate drinker of water, pouring down on an average several quarts a day. The attack in this case was sudden. There was great nausea, with frequent but ineffectual attempts to vomit, severe burning pain in the epigastric region, great prostration, and profuse bloody dis-

charges from the intestines. A quack was called in; under his treatment she grew rapidly worse, until at last her friends sent for a regular practitioner. At this time vibices and ecchymoses were visible upon the extremities; the gums were spongy, the diarrhoea still continued, the countenance was deathly pale, and sorrowful, and the pulse was frequent and feeble. The patient was allowed only small quantities of drink, and those at regular intervals; the diarrhoea was checked by mild means, and in the course of two weeks she was put upon the iron and wine. Her recovery was perfect.

Another case was under the care of a friend of mine, formerly a student in this College. Here the same morbid thirst was present. This was resolutely conquered, and the patient recovered with very little positive treatment. I might mention other and like cases to show that this habit of thirst long indulged is one of the principal causes of this dis-

case.

Post Mortem Appearances. The following have been observed. The meninges of the brain spotted with ecchymotic maculæ; ecchymoses to a greater or less extent in the convolutions of the brain; surfaces of the ventricles covered with small petechiæ; the ventricles distended with serum; the vessels of the pia mater turgid with black blood; coagulum pressing upon the brain. The ecchymoses are also found upon the lungs, in the mucous membrane of the alimentary canal, beneath the folds of the mesentery, and under the peritoneal coverings of the viscera. The heart is sometimes pale and easily torn and contains fluid blood or a pink colored gelatinous coagulum. On dissecting the skin some of the spots are found situated in the rete mucosum, others in the alveoli of the cutis, but the largest have their seat under the skin in the cellular tissue. The smaller contain liquid blood, the larger coagulum.

Diagnosis. The diseases for which this may be mistaken are Scurvy and Typhus fever. The former is so rare at the present day that many eminent medical men have not met with a case during a long practice. The history of the case with its accompanying symptoms determines whether it is Typhus fever or not.

Prognosis. This will vary according to the extent and persistence of the local hemorrhages, and the severity of the attack. When the bleeding is from the gums the prognosis is usually doubtful.

Treatment. The principles which should govern the treatment have already been hinted at in remarks upon the causes. If the patient suffers from inordinate thirst conquer it, if possible. Let the food be nourishing and insist upon its being taken regularly. Control the hemorrhages by appropriate means, and remove as far as may be all disturbing influences.

Bleeding, has been recommended but should never be employed, except in cases of accidental complication which bear a sthenic character.

Cathartics. These are of great utility in removing the watery elements from the blood and in relieving internal congestions. They are contra-indicated when diarrhoea is present.

Astringents, though frequently of no avail should be employed to control the hemorrhages if excessive.

Tonics and Stimulants. The former are valuable after the system has been prepared for their reception by appropriate treatment, and are especially indicated when the hemorrhages have been checked and nothing remains to be done except the cautious building up of the enfeebled structure.

The general stimulants, wine especially, in small quantities, may be given with

decided benefit through the entire course of the disease.

Turpentine has long had a reputation as a remedy in Purpura. It probably acts beneficially as a stimulant, and is also valuable for its hæmastatic virtues.

Dr Samuel J. Hardy of Dublin speaks in the highest terms of the efficacy of larch bark, but the only advantage it possesses over the other Teribinthinate preperations is probably its palatability.

This concludes what I have to say upon Purpura Hemorrhagica. It would be folly in this as in other diseases to rigidly adhere to any preconceived plan of treatment. The circumstances of the case and the symptoms as they present themselves will usually indicate the course to be pursued, and the physician commits an unpardonable error who misled by the name neglects the peculiarities of the case and kills his patient by the blind use of his vaunted specifics.

Scarlatina

Scarlatina is an acute inflammation of the tegumentary tissues of the whole body, both cutaneous and mucous, with fever & contagious or infectious bile. It is principally a disease of childhood and seldom attacks the same person more than once. The disease was formerly associated with measles from their mutual pathological resemblance.

The peculiar characteristics of Scarlatina as distinguishable from measles were first pointed out by Sydenham at the close of the last century. Sydenham appears to have been the first who gave the disease the name of Scarlet-Fever. It appears under every grade of violence from the simplest and least dangerous, to the most severe and malignant forms of disease. It commences with fever, which invades at an indefinite period from the second to the tenth day after exposure to infection. It is almost always accompanied with a rash of the skin, and frequently an

affection of the throat; the eruption is usually developed on the second day of the fever in the form of minute pinkish colored vesicles, also of a deep color; or it has an appearance of a scarlet color; the rash disappears at the end of six or seven days, leaving the skin rough and hard the epidermis peeling off in scales and lamina.

There are also several other varieties of scarlatina, which are merely modifications of the disease, but are certainly simple

Scarlatina Anginosa

Scarlatina Maligna

<u>Scarlatina Simplex</u>, is the most simple form of the disease. It commences with the ordinary symptoms of fever. When the efflorescence appears the fever ceases, the patient anxious and restless depressed in spirits and sometimes delirious although delirium is not common in this form of the disease, the eyes are red without lachrymation, face swollen, tongue covered with

white furr, and studded with red congested papillæ; the tonsils are enlarged, and the palate and pharynx red. On the second day of the fever the rash appears on the chest, neck, and face; on the third day the rash extends to trunk of the body, and upper extremities.

The efflorescence attains its most vivid redness on the evening of the fourth day. It is always redder in the evening than in the morning, and in certain parts of the skin in others. It rarely begins to disappear on the fifth day. It diminishes first on those parts on which it first commenced, and by the seventh it has almost totally disappeared. Desquamation has become general by the ninth day, and in many places lamina of considerable size are cast off.

Scarlatina Anginosa is a modification of simple scarlatina, and is characterized by the severity of the inflammation of the mucous membrane of the fauces and pharynx, and by the swelling of the soft palate and tonsils

The primary symptoms are more severe than those of Scarlatina simplex, fauces from the commencement and frequently before are redder than usual. There is a sense of constriction about the throat, and stiffness of the muscles of the neck, and jaws; the throat feels rough, there is hoarseness of the voice and a large collection of viscid mucous in the fauces, these symptoms generally increase. The mucous membrane becomes turgid, and swollen and partially covered with patches of false membrane, and superficial ulceration. The uvula and tonsils are congested and enlarged the tongue is covered with a white fur, and is studded with red spots the congestion and elongation of the papillae. While the local affection is thus rapidly progressing the constitutional symptoms are indicative of serious and dangerous disturbance, there is excessive heat of skin; pulse with trembling, laborious respiration; quick and feeble pulse; great

languor with restlessness; headache and [illegible], the eruption [illegible] is late in making its appearance. On the trunk it appears in irregular patches, while on the limbs it is [illegible] and the joints. It remains longer than the eruption of Scarlatina Simplex and the desquamation is less regular, and extensive. The rash may disappear suddenly and return again in a day or two. This is an unfavorable symptom, and is either fatal in its consequences or in aggravating [illegible] results of the (infection) disease. The eruption begins behind the ears or [illegible], and at the same time [illegible] of the Fauces Redsides. The slough are thrown off [illegible] and the patient [illegible].

Scarlatina Maligna

is a [illegible] aggravated form of Scarlatina Anginosa occurring in [illegible] epidemics, principally in [illegible]

Situations. Sometimes it constitutes the primary disease of [illegible] it invades suddenly and unexpectedly during the progress of Simple Scarlatina, and Scarlatina Anginosa.

In all these situations we find great prostration of the powers of the system, and the extreme, deep sloughing ulceration of the fauces, [illegible] sometimes scarcely perceptible.

There is great restlessness, raving delirium and coma. The lips and teeth are covered with sordes and the tongue with a dark brown fur. The cheeks are swollen and aphthous. Respiration is impeded, and quickened; there is a quantity of viscid phlegm in the [illegible] the heart is feble, deglutition is painful and difficult. The complexion is pale in its appearance is pale and indistinct, with the exception of a few patches of irregular size and shape become dark, and [illegible] petechiae. The duration of the rash is equally uncertain with its period of invasion.

[illegible] from the disease, as may be inferred from the severity of the symptoms, some patients are cut off at an early period, on the second third or fourth day, while others nice withstand its violence for a longer period. It may be remarked here that scarlatina is often fatal when it attacks pregnant or puerperal women, it is generally more severe in Autumn and Winter months than in Spring and Summer.

<u>Diagnosis</u>:— The only disease with which scarlatina is likely to be confounded is Rubeola. Both are tegumentary inflammation of the surfaces, cutaneous and mucous; both are accompanied by [illegible]; both are liable to be succeeded by serious affections of the viscera; both appear during the same epidemic and are apparently by the same infection; but [illegible] the [illegible] of the [illegible] return to the [illegible] in scarlatina the precursory symptoms are for one day [illegible], [illegible] [illegible]

membranes of the eyes nose and fauces are red without secretion. There is pain and soreness of the throat but no cough no expectoration.

In Rubeola the mucous membranes of the eyes nose and fauces are red with increased secretion. There is a dry cough at first; subsequently expectoration. In vaccination the eruption occurs in large irregular patches, or it is more or less generally diffused, in a light-brown color compared by some to the color of a brick bat. The efflorescence in Rubeola is in small crescentic and circular patches, with intervening unaffected portions of skin. The color is darker than in simple scarlet fever and compared to the hue of a raspberry.

Scarlatina is less infectious than Rubeola, and rarely attacks the same person more than once.

Measles sometimes attacks the same person more than once.

Causes:- Its tendency to epidemics identifies it with that of Measles. It mostly its attacks in forms of epidemics, and prevails mostly in the

Spring and Autumnal seasons, the atmospheric conditions most favorable to scarlatina are cold and moisture; and the [illegible] the weather, or any sudden change of time gives rise to a predisposition in the system from which scarlatina is likely to be developed.

Prognosis:- The prognosis will be much influenced by the nature of the prevailing epidemic. It sometimes invades with such overwhelming rapidity, as to destroy life before any pathologic change can be effected. Scarlatina simplex is always devoid of danger when it passes regularly through its course, the prognosis is favorable when desquamation occurs a few hours after seizure, [illegible] of the cervical glands, swelling in the throat, offensive secretions from the mouth & nose; a pale and cold skin; dark color of the mucous membrane and dusky appearance of the eruption are bad symptoms. Diarrhoea adds a danger as the bowels frequently [illegible]. The prognosis is extremely unfavorable when

it attacks women immediately after parturition

Treatment: In the treatment we must recollect that this is a self limited disease, that we can only modify the process, but we can not shorten time. Our object should be to rid the blood of the poison it contains, and which is supposed to be the cause of the disease, This is accomplished by calling into action the natural emunctories of the system. The degree in which these powers are to be induced to action will be determined by the strength of the disease. In the mild form of the disease nothing more is necessary than confinement to the house; constipating diet and regulation of the bowels, The room in which the patient is confined should be well ventilated, the patient head low; in fact warm, and the bed cloths light. He should be kept on a spare and constipating diet with an abundant supply of diluent and acidulated drinks, All sources of excitement should be avoided, In the beginning we should

give a mild cathartic to unload the bowels, If the extension of the disease to the kidneys should be indicated by anasarca or the state of the urine, we should resort to the warm bath. An active purgative such as one that will relieve the mucous membrane by exciting the secretions at the same time that it moves the bowels copiously must be administered. Calomel and Jalapa or Gi doses of Tri, Sulphate of Potash and Rep Chloride Lect. [illegible] considered as the best medicines to accomplish this end, and among these Cathartics should not be given except in the last [illegible] as they are likely fail of cooling the surface and producing [illegible] by intoxicating the [illegible].

<u>Emetics</u> are [illegible] to be avoided. They may be given to induce [illegible] vomiting [illegible] should to excite the secretions in the fauces, the trachea, and produce a determination to the skin, but we should give such as will not produce a great prostration.

<u>Diuretics</u> should be used with a view to excite

judiciously and administered as there is danger that they may increase the inflamatione which they are intended to abate.

Calomel is not a remedy to be generally used in this disease, unless there is some hepatic derangement.

Opium may be given to allay restlessness.

Belladonna is also used for the same purpose but probably has no specific power over the disease.

Local Applications:- Of various lotions and rapid washes it is most agreeable to the patient are anodyne, mild in their nature to the skin and allay restlessness and irritation. If there is a great deal of restlessness and heat of skin a moment in the surface with a hard is said to be very beneficial. Lotions of a soft and soothing application to the itching and burning surface of the skine, it also prevents the contact of atmospheric air and consequently as some suppose the too rapid oxygenation

of the blood, its great uncleanliness is a serious objection to its use, and sponging the body with tepid water, is to my mind far more preferable. If there should be nausea (and vomiting) which is very apt to be the case in Scarlatina Anginosa, the effervescing Salines, such as the citrate of Ammonia combined with laxative doses of Neutral Salts should be given. As inflamation of the mucous membrane of the fauces is one of the principal features of Scarlatina, this should be treated by early application of the Nitrate Silver either in strong solution or in the solid state. If there should exist a low grade of action in these parts a gargle of Capsicum may be used a fair Proportion of Sodium and Potassium — of each a teaspoonful — Sugar a teaspoonful add. Oil. Chlor. of Potash. as been used a great deal of late. If the tonsils are enlarged and painful so as to interfere with respiration or accompanied with pain in the head — leeches should be applied to

the submaxillary region. Blisters in these cases are objectionable as they by exciting inflammation of the cutaneous surface act in additional sources of irritation. It is said that the Iodine is not open to the same objection and that it is a suitable remedy. Venesection is a remedy which is highly recommended by some writers and by others disapproved of. It may be advisable in some cases, if the patient is plethoric, has a good constitution with a full, hard and frequent pulse, if inclined to pulse to blood, the accession of acute tonsilitis, that occurs to the inconvenience of the disease it is almost impossible to follow any previously conceived plan of treatment, the attendant should be (very diligent) vigilant to discover and cut, as far as possible, every untoward symptom which may arise.

Chas. W. Quigley
M.D.

A thesis comparing
Typhoid Fever
with the prevailing
fever of the army.
by
Frederick A. Dudley.

There appears to be a general impression existing among all classes of the community, which is also in some measure adopted by numerous members of the medical profession, that the one great disease that is now, and always has been prevalent in our Army since its organization is typhoid fever, and to show that this impression is incorrect, I will give a brief description of typhoid fever, together with its treatment, and compare it with the more common, but far less fatal

form of fever, with which it is often confounded.

Typhoid fever is a disease the cause of which is either obscure or unknown. It is said to be caused by a specific poison in the blood. Anatomically it is an inflammation and ulceration of the glands of Peyer. It occurs most frequently in the fall, and winter months, and is much more common in the northern states. That it is contagious to those who are in constant attendance upon the sick, I think is proved be yond a doubt.

It usually comes on insidiously; is not marked at the outset by any distinct febrile symptoms. The patient

after a few days of indescribable discomfort; complains of chills at night, followed by slight febrile reaction: there is usually a tendency to diarrhea from the very first. These symptoms do not abate, but the patient complains of pains in his back, and head, tenderness of the abdomen, loss of appetite, and the usual symptoms of fever, which assume a low type. From the eighth to the twelfth days there usually appears upon the trunk of the body, a rose colored eruption, which is followed by sudamina. From this time the symptoms usually increase in severity, and there is low muttering delirium, subsultus tendinum, tympanites tenderness, and gurgling under pressure

in the right-iliac region, the tongue is dry, black, and fissured, sordes collect on the teeth, and the diarrhea is almost constant. Copious and alarming epistaxis sometimes occurs. These symptoms may gradually abate, or in unfavorable cases they may continue or increase in severity, or death may suddenly occur from perforation of the bowel, and consequent peritonitis.
The duration of the disease is usually from thirty to forty days.
There is a latent form of the disease which is even more uniformly fatal than the condition just described. The patient is usually unable to fix upon any particular time when he first began to feel unwell. He complains of pain in his back, and head, suffers from slight diarrhea,

which may run on without any other symptom of moment, and finally terminate in recovery, or as more often happens, with pain in the abdomen, sinking of the vital powers, prostration, and death from perforation of the bowel. These cases were quite numerous during the winter of 1861 and 1862, and those that I saw were almost uniformly fatal.

The treatment usually consists in a symptomatic or expectant course of treatment: Any attempt to cut short the fever by emetics, or cathartics are worse than useless. The system needs supporting from the very outset, and for this purpose brandy, carbonate of ammonia, camphor,

sulphate of quinine, beef tea, milk punch may all be given.
At first a mild cathartic may be given, but it is well to remember the tendency to diarrhea: The body should be sponged with tepid water or vinegar, and these remedies are very useful in correcting any disagreeable odor that may arise from the patients body: Opium may be given to quiet the patient and promote sleep: For subsultus, and delirium brandy and carbonate of ammonia are the appropriate remedies; in fact these two remedies may be given in almost any stage of the disease, the pulse however should be the guide. In the latter stages, when

the tongue becomes dry, cracked, and black, turpentine in doses of fifteen drops every two hours is very useful; under its influence the tongue becomes moist, and smooth, and the tympanitis disappears; Warm fomentations to the abdomen are also of great benefit.
If peritonitis comes on suddenly, Opium may be administered in large doses but with trifling hope of success.

During convalescence the utmost caution is necessary to prevent a relapse; Any irregularities in diet; or undue exposure, will often bring on a train of symptoms from which the patient is seldom known to recover: The diet should consist-

of the mildest kind of food, farinaceous articles, beef tea, milk punch, and the easily digested meats. The patient should be informed of the danger and cautioned not to eat any thing not prescribed by his medical attendant. This together with the employment of tonics during the period of convalescence has been so far as I have seen the customary mode of treating typhoid fever.

But typhoid fever is not the fever that is prevalent in our army, although some official reports would make it appear to be. And when it is remembered that upon admittance to a general hospital, the patient is in a low, adynamic, condition and

that the fever has usually entirely lost its remittent character, it is not to be wondered at that the incorrect diagnosis is so often made. The fever that is prevalent in our army is evidently a fever of malarious origin. It prevails in those localities where swamps abound, and where decaying vegetable matter is found in great abundance. The severity of the symptoms, and consequent mortality, depend upon the density of the poison, and the amount of exposure the patient has been subjected to: those cases being more severe, and much more fatal, that were contracted in the camps on the banks of the Chickahominy. The fever is marked at the outset by

distinct remissions: It comes on openly, and compared with the true typhoid suddenly. It is usually accompanied by a full pulse, yellow tongue, nausea, bilious vomiting and tenderness in the hypochondriac regions; as the disease goes on there is great prostration of the vital powers, delirium, which is usually of a low, muttering character, tympanites, and subsultus tendinum, some of the symptoms simulate those of typhoid fever, but many of the distinct symptoms of the latter disease are wanting, there may be tenderness of the abdomen, but there is no particular tenderness or gurgling under pressure in the right-iliac region, the rose colored

Eruption is also absent; Neither do post-mortem examinations ever find any of the characteristic lesions of Peyers glands, The liver is found to be enlarged, and usually of a bronzed color, and the mucous membrane of the stomach and duodenum, is often found injected, and sometimes thickened, or softened.

The treatment so far as I have seen has been the employment of some cathartic dose, that will produce full, consistent dark colored stools. Calomel is frequently given, followed by castor oil or fluid ext-senna. The bowels should be kept open during the whole time, and for this purpose castor oil with small

doses of turpentine are the most useful. During the early stage diaphoretics may be given, and the body should be often sponged with tepid water or vinegar. When there is much tenderness over the stomach with nausea, a mustard cataplasm or dry cups should be applied. If vomiting is severe, Acet. plumbi and Opii in doses of one grain of the former, & one quarter of a grain of the latter, or minute doses of calomel may be given. Stimulants should be given early: The system will need supporting and they should not be delayed to long: It is well to treat the disease somewhat on the expectant plan, by giving at an early period small

doses of carbonate of ammonia, with sulphate of quinine, or Camphor, and increase as the symptoms indicate. Brandy, wine, beef tea, milk punch all will be indicated and that in large quantities as the disease advances. In the latter stages when there is tympanites and the tongue is dry, black, and cracked, turpentine in doses of ten or fifteen drops every two hours is indicated. it produces the same good results as in typhoid fever. When there is restlessness, wakefulness, or delirium, Opium or dovers powder at night should be given.

During convalescence the same care should be taken to prevent a relapse as in typhoid fever. Thus in a

brief manner have I endeavored to give a description of a disease that has caused more suffering and death than all the bullets and devices of the enemy combined, that has brought sorrow desolation and mourning to thousands of heretofore happy homes The sacred soil of Virginia sacred only because in its bosom rest the remains of thousands of brave men who languished and died during that long winter of inactivity bears silent testimony by those mounds which are scattered here and there in little groups along the whole line of encampment that it is disease and not bullets that is so constantly decimating our army

The Use of the Microscope in Medicine

By

Wm. H. Thomson

New Haven Conn
July 30th 186[illegible]

The Microscope in Medicine

Within a few years, great changes have taken place, both in the theory and practice of medicine. These have been brought about in a great measure, by new discoveries in the Materia Medica, by wider and more enlightened views in regard to the humanity and expediency of certain practices, but more particularly by the better insight which we have gained into the minute structure of the human system, and the functions of these minute organizations. We cannot give too much praise to the Fathers of the noble science, for their minute researches in Anatomy and Physiology and the deductions which they drew from them; but at that time, [illegible] the knowledge of kindred sciences had [illegible] up to the [illegible] [illegible] their conclusions were for the most part [illegible] support. It remained for the enlightened advancement of the 19th century to remove these

[illegible] and [illegible] the [illegible] excepts of [illegible] to an exacting age, and [illegible] has been accomplished by means of Chemistry and the Microscope.

By the aid of these two agencies have we been enabled to examine the most minute elementary structures of the body, and [illegible] the performance of the functions [illegible] in each. We have learned the appearance in a state of health, and have seen the changes which take place in ill-health, and by observing the influences which bring about these changes we are [illegible] to the essential cause of disease. I propose [illegible] of only [illegible] agents in my thesis "The Microscope"

Probably the [illegible] of research to minute [illegible] by means of the microscope, we [illegible] Schwann who in 1839 promulgated his theory of the cellular composition of the animal system. So minute were his researches, and so clearly proved his theory, that he [illegible] with [illegible] title of the "Father of Histology"

Despite all we have yet learned of Histology, it is evident

That this portion of anatomy is still imperfect, yet what we have seen of it leads us to believe that it will eventually prove to be the grand formulation from which medical science rises. If it was not for the microscope, we should still be in the dark, as to many of the facts in this department, which are now universally acknowledged; the elementary structure of the animal tissues, their gradual development, how they are maintained and nourished, and how worn out and replaced by fresh forces.

With the exception of the vent membranes, and some of the fibrous tissues, it is now conceded that the human organism is primarily developed from cells; the embryo tissues are nourished by other cells, and the changes which are constantly going on in the body for the removing and renewing of these tissues, are performed by cells. A cell is primarily of a nearly circular form, and consists of a very delicate and structureless wall, this encloses a

nucleus surrounded by a fluid which often contains more or less granular matter and the whole cell is surrounded by an organizable fluid called the blastema from which the cell takes its origin. All these elements are concerned in the production of tissues, but it is probably in the nucleus, that is situated that particular vital principle which determines one set of cells to be electric nerve, another cartilage and still another nerve. It is by the multiplication of these cells that tissues are formed, and they are multiplied in several ways: by the repetition of the process of which I have spoken, by the development of new nuclei and cells within the parent walls, and by the development of new cells from the parieties of pre-existing cells. These cells may lose their fluid content, and their sides collapsing until they come in contact and unite. Solid deposits may occur within the walls of the cells thus obliterating their cavities, or it may be

deposited in the blastema around the cells, and thus a solid is formed. Sometimes the ends of the cell adhere and their cavities mutually opening into each other, form a hollow tube, in this manner the cells are formed. These solid cells being connected form muscle, and it is by the different conditions of development in this process, that causes the difference between voluntary and involuntary muscle. Both are developed from muscular fibre cells, by uniting in the manner I have shown, they form fine muscular lines which are called fibrillae, these being bound together by a delicate sheath, called the myolemma, form what was supposed to be, before the discoveries by the microscope, the ultimate fibre, these muscle into little bundles form a fasciculus, and these fasciculi being again invested and bound together by cellular or areolar investment, form a muscle; the fibres are crossed by definite lines, giving them the appearance of being cut up into little square blocks, these are

the striae. Now in the development of this process we find the fibrillae, being arranged into little bundles, and placed lengthwise; now if the development is arrested here, we have the texture of smooth or involuntary muscle; but if the development goes, the bundles are bound together by the cellular membrane, the striae appear and we have voluntary muscle. It is, therefore, a fact, that between voluntary and involuntary muscle there is no essential structural difference, but that they are the result of different stages of development, in the same tissue. This is only one of the many processes, which we can trace out of the nascent state through to its completion.

The facts which have been here shadowed forth are to a great extent irrevocable. The heart, the pulsations of life, the pulsations of the heart beats, the circulation of the network of capillaries, the tortuous and various motions of the fluids, its connection with the arborescent radials of veins and arteries, and the

mysterious structure and functions of the spinal cord, and medulla oblongata.

To the casual observer, the brain and nerves appear to be composed of fibres, but Prof. Beale and the microscope, have shown us that their nature is not fibres, but numerous tubes containing a fluid which can be seen to flow out upon pressing their broken extremities. The microscope has shown us that a fine network of minute vessels, lies between the arteries and veins, partaking of the properties of either but, possessed of others peculiar to themselves.

On regarding with the naked the different glands in which the secretions are formed, how complex and various in conformation they appear.

Yet the microscope teaches us that they are all formed on one type, that the ultimate element of every gland, is a simple saccular membrane, to which the blood vessels have access; and that the

difference in formation is only owing to a difference in the arrangement of the primary structure. All our knowledge of the real anatomy of the skin and epidermic structures, such as hair, horn, feathers &c. the real structure of cartilage, bone, teeth, tendon, cellular tissue, and in a word, of all the solid textures, has been revealed to us by the agency of the Microscope

In Physiology the benefit of the microscope is abundantly shown The functions of organs are intimately related to their minute structure, and if we would know the functions, we must first gain a knowledge of the structure of these organs

Not until with the microscope we first learned the Anatomy of the myriad of glands and follicles distributed through the Alimentary Canal, did we begin to get a clear insight into the process of digestion. The structure of these

bodies disclosed the manner in which their fluids were thrown out. These fluids when thrown upon the food in the stomach disintegrate and dissolve it; that which is nutriment is separated from the rest and taken up in the form of chyle, by the lacteals of the intestinal villi, and carried to the mesenteric glands, and so on through the large chyliferous vessels until it reaches the heart in the shape of blood.
For the simple secretions, as those of the mucous membranes, no complicated apparatus is needed, these functions can be performed by simple follicles alone. But the complex secretions require glands as well as follicles. When these are brought before the eye by the aid of the microscope, we still find that the important parts are vessels, cells and membranes. The ancients regarded the Liver and Kidneys as very complicated machines, but with our better enlightenment with

the microscope, we see in them only a dissimilar arrangement of similar parts, and the whole organ is no more intricate than is a microscopic section of a part; for a single hepatic tubule, or a single cone of uriniferous tubules, with its cortical appendages, is a perfect organ, and each of them is a perfect type of all the rest. Pages might be written to show the invaluable aid which microscopic anatomy has rendered to Physiology, but two or three illustrations such as the above, if examined in all their details, will prove convincingly to the enquirer all that I contend for. The microscope has been of great value to Physiology, but it has not and cannot relieve it of all the doubt and ignorance that still exists concerning some of the important functions. It is not in the province of microscopic anatomy to explain the functions of an organ; it rather shows the relation there is between its function and its anatomy, and that relation often points directly

to the how and wherefore of the function

Again in diagnosis the microscope shows itself of incalculable advantage to the physician. In diseases of the skin, in urinary and digestive derangement, in pronouncing upon the character of tumors, whether benign or malign; the presence of tubercle, and numerous other facts in diagnosis are determined by the microscope.

Disease is seldom present for any length of time in the urinary organs, without evidence of it being shown in the urine. There is seldom any deposit in the urine which the microscope cannot throw light upon its nature and cause; the knowledge which we gain by this examination is not limited to the name of the disease, but we learn its grade and stage and often its precise locality. Most diseases of these organs, especially the inflammatory, cause a shedding of the lining membrane or epithelium of the affected part, and the microscope having already taught us the minute anatomy of these

parts, we easily tell by the size, shape, and general appearance of the epithelial cells, from what part of the urinary organs these came. Thus having determined the nature and seat of the disease we can apply our remedies understandingly. The microscope can with almost certainty diagnose Brights disease by the casts of the uriniferous tubes. Affections of the bladder, inflammation, or a simple irritation without inflammation, these every observer is quite well aware, can be determined by the presence or absence of the pus corpuscle. In many cases there is a large deposit of light colored matter, which seems to the eye to be pus, but under the microscope it turns out to be epithelium of the bladder. In some cases the sediment ~~consists~~ of crystaline matter, it may be Uric Acid or it may be Oxalate of Lime. Knowing

this and applying timely treatment, we may in the one case prevent gravel formations, or in the other overcome that diseased condition which would produce Stone in the Bladder If the secreting structure of the Kidney is affected, the microscope shows us casts of the renal tubules, and by observing if these casts contain epithelium or are filled with granular matter, oil globules, pus or blood, we determine whether there is granular degeneration, Fatty softening, or whether the Kidney is being destroyed by some other disease.

In determining the character of tumors, their minute structure generally characterizes their class, and although by observing this we may not always determine the fact, yet the cautious study of the minute anatomy of the tumor in any case will greatly diminish the chances of error in diagnosis To the naked eye there will seem but little difference in the structure

of two tumors; but place them under the microscope, one we find to be made up of fatty matter, or perhaps fibrous tissue, with the fibres arranged concentrically, and not differing from fibrous tissue in any other part of the body, being, in fact, only hypertrophied portions of the natural fibrous tissue, we pronounce benign tumors

The other on the contrary is found to be composed of fibrous tissue, but with the fibres arranged rectilineally, leaving interspaces, and these interspaces filled with irregularly shaped cells, suspended in a viscid fluid with a quantity of granular matter.

If these points are well marked we pronounce it a malignant growth

Too much care can not be exercised in the diagnosis of tumors; errors have occurred and will occur again: some observers have declared a simple fibrous tumor to

or malignant, because they find one cell, or have mistaken cartilage or fibre cells and even pus globules for cancer cells.

It is well known that the benign tumors sometimes degenerate into malignant, and the change goes on so gradually that it is almost impossible to tell whether a tumor is still benign, or whether it is cancerous, so that in such cases the best observers might be mistaken.

The advance of that insidious disease Phthisis, may by careful examination be determined and guarded against. It is not pretended that by examination of the Sputa, you can positively say what is the condition of the patient, or what is best for him. The presence of tubercle can be detected in any locality accessible to examination, but it is doubtful whether tubercular corpuscles

are discovered in the sputa, from the difficulty of distinguishing between a tubercle corpuscle and a shrivelled degenerated pus cell. The destructive process going on in the lungs may however be known by the shreds of pulmonary elastic tissue which are observed in the sputa

I do not wish to claim too much for the microscope in diagnosis It is not infallible, and should not alone be depended upon; but it is as an addition to our other means of diagnosing disease that it is invaluable Its greatest value is demonstrated in its discoveries in Anatomy, Physiology and Pathology. With regard to these its value cannot be doubted; it is revolutionizing our medical faith Among its contributions to minute normal anatomy and Physiology, as well as to Pathological history, it is daily paving the way for the greatest improvements, and even those who at the present day, do not appear to

appreciate this mode of investigation, are indebted to its earlier observation for their medical views, to an extent they would hardly care to acknowledge. There are some in the Profession who decry the Microscope and microscopic investigation, and who think the benefits gained, are overbalanced by the false inferences caused by imperfect investigation.

It is true that errors have been committed, and undoubtedly will be again; but shall we give up the microscope, because some have made imperfect explorations, or have wrongly interpreted their revelations? In most cases the fault is chargable to the observer rather than to the instrument, and for the reason, that they were hasty in their examinations, or expected too much from the microscope in diagnosing.

Let them exercise patience in their investigations, be thorough and systematic, only

discover what they really see, and this reproach will be removed; the Microscope will take its proper rank, as the greatest aid to the advancement of medical science which we have.

Wm. H. Thomson

New Haven Conn
July 30th 1862

The Differential Diagnosis of Variola – Rubeola & Scarlatina

A Thesis by
Benjamin Spencer Catlin
July 1862

The crucial test to which the information as well as the judgment of every practitioner of Medicine must be subjected is – Diagnosis. Without accuracy here, experience is unsatisfactory, and all ideas of rational treatment become worthless. Diagnosis forms the indispensable basis of all advances in Medicine

as a practical art — it defines and fixes the objects about which observation is to be practised and experience collected — The term experience is misapplied and the results of all observation are vitiated, when any doubt exists about the bearings of the objects contemplated — No greater hindrance lies in the pathway, which has for its goal, perfection in the healing art, than false reasoning, and false reasoning springs from false Diagnosis.

The scientific and earnest inquirer, feels that this is the subject which demands, above all others, the strongest exertion of his mental powers and the keenest exercise of his faculties of observation — — & knowledge of Pathology and a familiarity with Semeiology, and

the two prerequisites to accuracy of Diagnosis —

The Pathology of the three diseases, the differential diagnosis of which we propose to consider is so little understood that the distinctions between them must be chiefly if not entirely based on Semiology — It may be thought that the Signs and Symptoms of these diseases are so clear and obvious as to render the Subject too trivial for discussion — but the grievous errors — grievous alike to the physician and the patient — injurious to the reputation of the one and destructive to the happiness of the other — which are so often made in their early diagnosis — give such interest and importance to an intimate and thorough acquaintance with their Several stages of development that the Selection of their differential

diagnosis, as a theme will be pass-
-ained

Variola - Rubeola & Scarlatina
are classed among the Exanthemata
or Eruptive fevers - Their progress
admits of a division into six stages
- viz - 1st The stage of Incubation. 2d The
stage of Invasion 3.rd The stage of Eruption
4th The stage of Desquamation 5th The
stage of Convalescence. 6th The stage subsuming
the Sequelae - The second and
third stages are the most important
with reference to diagnosis

The period of Incubation is variable
and difficult to determine - In Variola
it has a wide range of from five to
twenty days - the average of one hundred
cases being ten days - In Rubeola
the stage is less prolonged rarely
extending over ten days - The usual
limit is between six and eight days
In Scarlatina its duration is much

Shorter continuing often but three days — The stage of Invasion dates from the commencement of the illness and continues up to the first appearance of the eruption — In Variola it is ushered in by a chill, but not invariably — The rigors are followed by heat and dryness of the skin — a hard and frequent pulse. The patient complains of intense pain in the back — This frequent and prominent symptom should not be disregarded. Pain in the head and limbs is usually present — together with nausea and vomiting, though these are less persistent. When the disease is severe of a severe form delirium and severe convulsions occur during this stage and the fever is correspondingly violent — The absence of all catarrhal symptoms is especially diagnostic. This stage continues for three days and its duration is constant, the

eruptions being rare. In Rubeola the stage of Incubation extends over four days — In the outset of the fever — the Catarrhal Symptoms will at once attract attention — The patient is troubled with a Cough — his Eyes become watery — his voice is hoarse — the throat is often Sore but Severe inflammation and ulceration are never present — These Symptoms in Connection with febrile movements which exceed in Severity, those ordinarily attending them are diagnostic of the disease — The Second stage in Scarlatina is characterized by nausea and vomiting — The fever is intense and Continues for twenty four hours — The patient at once complains of Soreness in the throat, which will be found covered with an effloresence —

At the close of the third day,

the fever attending Variola abates — the previous eruption first becomes apparent and the disease has now reached its third stage.
The spots are secondarily minute and without care will escape observation. The appearance is that of a colored spot, with no elevation — purple or lilac in hue — These maculae are found first on the lips and chin, then on the neck and wrists and on the trunk of the body and lastly on the extremities. They appear in this succession gradually and do not come to come out until the fifth day — In a few hours they become papular in their character and now the disease is most liable to be mistaken for Rubeola. Passing the hand over the surface, the feeling is like that of small shot imbedded in the skin — hard — resisting — points. In twenty four hours the cuticle becomes

elevated and at its summit, there is a drop of liquid — In forty eight hours the papulae become distinct vesicles These gradually increase in size — the fluid becomes transparent and in seventy two hours they are fully developed Their appearance is characteristic — excluding the eruption of Secondary Syphilis. It is pathognomonic. — The vesicle is umbilicated, containing a depression in the center — this humor is not observed in all. The cuticle seems bound down by a filament of areolar tissue or the duct of a sweat gland — The interior of the vesicle is divided into several cells — each lined with lymph — The appearance of the vesicle itself, is like that of a truncated cone flattened at its summit. The contents soon become purulent and the vesicles are changed to pustules, suppuration having commenced. The pustules are

distended — the cells are broken up — the central depression is lost — the face swells — the eyelids are sometimes closed — and the natural aspect suffers a sudden change — About the seventh day of the eruption there is commonly a slight rise of the fever — which is styled the fever of maturation.
Suppuration is completed on the eighth day. The pustules now begin to break and crusts or scabs to form — This closes the stage of the eruption.
The pustules may be few or many in number — Sometimes there are not more than half a dozen — Sometimes there are many thousands — When the pustules are very many they run together — when they are few, they are separate from each other. This affords a line of distinction into the Variola discreta and the Variola confluens. — The course just described is that which the eruption pursues on the face

where the papules seen in the discrete form of the disease are most thickly set — When the disease is confluent in its forms, the eruption appears earlier. The intensity of the fever is not greatly diminished — The macules are minute and crowded together and the diagnosis between Varicella and Scarlatina is for the time being, rendered difficult — The papules when formed are less plump and more irregularly depressed — Their hue is red — blue — or purple, the color being derived from the hæmatin of the blood — Petechiæ are found and hæmorrhages occur from different parts of the body — The secondary fever rarely exceeds in severity that attending Varicella discrata and it is at this period that death oftenest takes place.

The eruption in Rubeola usually appears on the fourth day of the disease but not unfrequently its coming is delayed.

The fever does not abate but sometimes increases in intensity. The eruption is first discovered on the forehead and temples — In a few hours it extends over the neck and in thirty six hours it covers the entire body — The red dots first seen, enlarge, become slightly elevated and multiply — as they increase in number they coalesce, forming blotches, crescentic in form. Their color is a deep dark red. The skin about them retains its natural hue. If the eruption is copious swelling takes place, accompanied by pruritus and soreness. The maculae early pass on to form papulae and vesicles, but these may occasionally be noticed. The catarrhal condition of the second stage continues — cough — discharge from the nose and eyes — sub-acute bronchitis — with dry bronchial râles and

hoarseness of the voice, due to effusion internally – The Eruption begins to fade on the third day or the Seventh day of the disease and disappears on the fifth.

It sometimes reappears –

In Scarlatina the eruption appears, simultaneously, on the face and neck, on the second day and retreats rapidly over the trunk and extremities. In twenty four hours the body is completely covered – The eruption consists of minute spots, rapidly coalescing into patches of various sizes and forms, irregular and scattered. The redness which invades the whole surface is vivid. The color has been compared to that of a boiled lobster. – The patches are most abundant where the skin is delicate – The face is slightly swollen – The temperature is somewhat elevated – In certain cases the eruption is modified – the spots have a punctated appearance, small

vesicles appear — called varicella or miliary vesicles — The sensation when the hand is passed over the surface is not constant. It may be smooth or rough — from the congestion of the papillae of the skin — Pruritus is often vehemently troublesome during this stage — From the fourth to the seventh day the eruption gradually fades — The affection of the skin which has just been considered is one of the most striking and important features of this disease — The affection of the throat, occurring during the same stage demands attention. The efflorescence in the fauces precedes that of the skin and the first thing of which the patient usually complains is sore-throat. In a short time the tonsils will be found covered with an ash-colored exudation which is often considerable in amount. Blood is extravasated, the tongue becomes dark but only sanguineous The appearance of ulceration is deceptive

It is due mainly to a change in the secretion. The lymphatic glands of the neck enlarge - They may even suppurate. Deglutition becomes difficult. There is a muco-purulent discharge from the nose. This irritating matter occasionally finds its way up the eustachian tube and gives rise to perforation of the tympanum — internal or external otitis. The appearances of the tongue are peculiar and characteristic - 1st Red points piercing through a thick, white fur. 2nd Enlarged papillae. There is a fetor in the breath. Vomiting and diarrhoea may supervene. The febrile movement continues and is increased. The pulse is vastly accelerated - quick as distinguished from frequent, vibrating from one hundred and twenty to one hundred and sixty - Delirium is not unfrequent. With the decline of the emphysema the fever abates. ——— It will be unnecessary to follow the various stages their three

remaining stages. The point already reached in the history of this Cause is sufficiently advanced to render further inquiry irrelevant to our design. If only remains to pass in review briefly, those signs and symptoms, already mentioned in detail, which may be considered to possess special diagnostic value.
It may be premised that while no period of life affords exemption from an attack of either of these diseases — at the present day, in this country, Variola is most frequently seen among the middle aged — Rubeola and Scarlatina among children — The stage of Incubation furnishes but a single important point in the differential diagnosis — that is its brevity in Scarlatina, extending rarely, as has been shown, over a longer period than three days, while its average duration in Variola has been stated to be ten days and in Rubeola seven days — During the Invasion of Variola, there is invariably present, intense

pain in the back, which patients suffering from the two other forms of disease never complained of — In Rubeola the catarrhal symptoms are present from the outset. In Variola & Scarlatina they appear, if at all, late in the disease. The first event in this stage of Scarlatina is often vomiting. When this occurs in Variola, it is always associated with the severe pain in the head & back before spoken of — In Scarlatina the efflorescence in the chest will be noticed before the eruption on the skin. The stage of eruption, in Scarlatina, continues but twenty four hours — in Rubeola its length is four days — in Variola its limit is three days — When it is possible to estimate the duration of this stage with accuracy, its value as an aid to early diagnosis is great. The eruption first appears, in Variola on the chin & lips — in Rubeola on the temples and forehead — in Scarlatina, on the face, neck & chest simultaneously. The eruption does not come to come out in Variola till the fifth day. In Rubeola it extends over the body in thirty six hours — In Scarlatina it pervades every part of the skin in twenty four hours — In Rubeola the eruption begins to fade on the third day and disappears on the fifth — In Scarlatina the eruption stands out for four days, then declines and disappears altogether on the seventh

The variolous spot soon becomes hard and popular – shortly changing to a vesicle – with the characteristic central depression – The eruption of Rubeola never exhibits fluid – the few scattered milking vesicles excepted. – The macular rose collect into semicircular groups, slightly elevated and of a dull red hue. The redness of scarlatina quickly becomes spread over the entire surface, its elevation is less than that of Rubeola – its color bright and vivid – The fever comes on the appearance of the eruption, in Variola, in Rubeola it continues without abatement, in Scarlatina its intensity is increased